levels varied inversely, with the highest occurring during the early morning hours. Histamine levels did not rise comparably in subjects without asthma. Results of these studies imply that some breakdown in the homeostatic mechanism for controlling bronchomotor tone occurs in persons with asthma. Because antihistamines are not regularly effective against nocturnal asthma, other mediators of bronchoconstriction need to be determined before this aspect of asthma can be treated.

HAROLD S. NOVEY, MD

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Physical Urticarias: An Important Cause of Hives

THE PHYSICAL URTICARIAS are a group of diseases in which certain stimuli applied to the skin cause hives and, occasionally, respiratory symptoms. At least seven distinct forms of dermal stimuli can cause urticaria: heat, cold, sunlight, trauma, prolonged pressure, vibration and water. Heat, cold and solar urticaria, however, each exist in more than one form. Physical urticarias are usually acquired conditions, although there are two rare inherited forms—familial cold urticaria and vibratory urticaria. Generalized heat urticaria (cholinergic urticaria) and trauma urticaria (dermatographism) are relatively common, the latter occurring in 1 percent to 5 percent of the population. The mechanisms of most physical urticarias are poorly understood, although mast cell mediators are clearly involved in several of the forms. There is no association with other atopic disease, but immunoglobulin E antibodies may play a role in dermatographism and in some forms of acquired cold urticaria and solar urticaria.

The diagnosis of physical urticaria can usually be made by taking a careful history and carrying out appropriate challenge tests. Laboratory tests are of use only in excluding other conditions. Localized heat urticaria and primary acquired cold urticaria can be determined by exposure of an extremity to hot water or an ice cube, respectively. Dermatographism can be determined by stroking the chest or back with a blunt object, and aquagenic urticaria can be detected by application of distilled water to the skin. Solar urticaria can be induced by exposure to sunlight or ultraviolet light of specified wavelengths and vibratory urticaria by skin massage or vibration. Familial cold urticaria differs from acquired cold urticaria by a delayed response to cold (negative ice cube test), positive family history and systemic findings (leukocytosis, fever and arthralgias) at the time of the urticaria. Pressure urticaria usually occurs after prolonged pressure, and the wheals characteristically develop in association with tight clothing, especially at the waistline, shoulders, ankles or feet.

Cholinergic urticaria has a distinctive appearance of tiny wheals on a large erythematous base over the trunk, and it may become generalized with resulting bronchospasm. It is thought to be due to a dermal hypersensitivity to released acetylcholine and, thus, is provoked by exercise or factors which induce sweating (such as stress, emotion or heat). The intradermal test with methacholine has not been shown to be reliable for diagnosis of this disease.

Hypovolemic shock can sometimes occur with physical urticarias if the stimulus is intense or occurs over a large surface area. This is seen most often in acquired cold urticaria when there is a sudden, diffuse exposure to cold such as when one plunges into cold water. Patients with recurrent urticaria or unexplained anaphylaxis should be questioned about physical urticarias, and provocative testing should be done when appropriate.

Treatment of physical urticarias consists of avoidance of the causative physical stimulus, and administration of antihistamine drugs. Solar urticaria may benefit from appropriate-spectrum sunscreens. Steroids are rarely required.

JOHN R. TENCATI, MD

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Respiratory Symptoms in Children Whose Parents Smoke

EPIDEMIOLOGICAL STUDIES have shown that upper and lower respiratory symptoms are more likely to occur in children whose parents smoke. Survey findings from the United States, Great Britain and Israel indicate that such symptoms occur most commonly if both parents smoke, less commonly

if one parent smokes, and least often if there is no smoking in the household. It was found that in families in which one parent smoked, only smoking by the mother produced a significant effect on the child. The child's symptoms were directly correlated wtih the number of cigarettes smoked by the mother as well as with maternal respiratory symptoms, but not with birth weight, birth order, social class or family size.

The symptom most commonly observed in infants less than 1 year of age, whose parents smoke, is cough, particularly during daytime hours, whereas older children generally have persistent wheezing in addition to coughing. Dyspnea and sputum production as well as upper respiratory symptoms that suggest recurrent colds or allergic rhinitis occur at all ages. Pulmonary function is inversely correlated with cigarette consumption by parents. There is no increased incidence of croup or bronchiolitis.

Although a familial genetic susceptibility to respiratory illness cannot be ruled out by such studies, it is more likely that the well-recognized irritant properties of cigarette smoke ("passive smoking") are the major factor in producing these ailments. Findings of several studies show a positive correlation of respiratory symptoms in infants and children with respiratory symptoms in their parents who smoke, which suggests cross-infection within the household as a possible mechanism. However, it is more likely that symptoms of both the children and adults are a reflection of the amount of exposure to smoke.

In the diagnosis of chronic coughing in infants and persistent wheezing in children, parental smoking must be considered to avoid possible misdiagnosis as recurrent colds, hay fever, asthma, bronchitis or pneumonia.

ABBA I. TERR, MD

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